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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Cyprian E. Uzoh et al.

Serial No.: Not Yet Assigned

Filed: May 1, 2001

Title: ANODE DESIGNS FOR PLANAR METAL DEPOSITS WITH ENHANCED
ELECTROLYTE SOLUTION BLENDING AND PROCESS OF SUPPLYING
ELECTROLYTE SOLUTION USING SUCH DESIGNS

COPY

INFORMATION DISCLOSURE STATEMENT

BOX PATENT APPLICATION

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Applicants hereby notify the U.S. Patent and Trademark Office of the documents which are listed on the attached Form PTO-1449 and which the Examiner may deem relevant to patentability of the claims of the above-identified application.

Document BT is mentioned on pages 2-3 of this application. Document AR corresponds to document BT.

The Examiner's attention is additionally directed to the following co-pending and commonly assigned applications;

<u>Serial No.</u>	<u>Filed</u>	<u>Title</u>
09/283,024	March 30, 1999	Method and Apparatus for Forming an Electrical Contact with a Semiconductor Substrate
09/285,621	April 3, 1999	Method and Apparatus for Plating and Polishing a Semiconductor Substrate
09/466,014	-	A Vertically Configured Chamber Used for Multiple Processes
09/483,095	January 14, 2000	Semiconductor Workpiece Proximity Plating Methods and Apparatus
09/373,681	August 13, 1999	Method and Apparatus for Depositing and

Controlling the Texture
of a Thin Film

09/398,258

September 17, 1999

Novel Chip Interconnect
and Packaging
Deposition Methods and
Structures

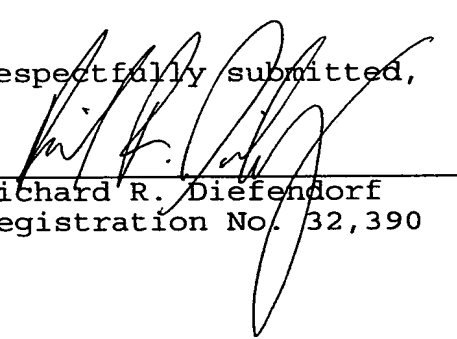
09/544,558

April 6, 2000

Modified Plating
Solution For Plating
and Planarization
and Process Utilizing
Same

May 1, 2001

Respectfully submitted,


Richard R. Diefendorf
Registration No. 32,390

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orm PTO-1449

U.S. Department of Commerce
Patent & Trademark OfficeAtty. Docket No.
2022/49308Serial No.
Not Yet AssignedApplicant
Cyprian E. Uzoh et al.Filing Date
May 1, 2001Group
Not Yet AssignedJC971 U.S. PTO
09/845262

05/01/01

INFORMATION DISCLOSURE STATEMENT
(Use several sheets if necessary)

U.S. PATENT DOCUMENTS

Examiner Initial		Document Number	Date	Name	Class	Sub-Class	Filing Date (if appropriate)
DEV	AA	3,328,273	06-1967	Creutz et al.			
	AB	4,430,173	02-1984	Boudot et al.			
	AC	4,948,474	08-1990	Miljkovic			
	AD	4,954,142	09-1990	Carr et al.			
DEV	AE	4,975,159	12-1990	Dahms			
	AF	5,084,071	01-1992	Nenadic et al.			
	AG	5,256,565	10-1993	Bernhardt et al.			
	AH	5,354,490	10-1994	Yu et al.			
DEV	AI	5,516,412	05-1996	Andricacos et al.			
	AJ	5,681,215	10-1997	Sherwood et al.			
	AK	5,755,859	05-1998	Brusic et al.			
DEV	AL	5,762,544	06-1998	Zuniga et al.			
	AM	5,770,095	06-1998	Sasaki et al.			
	AN	5,773,364	06-1998	Farkas et al.			
DEV	AO	5,793,272	08-1998	Burghartz et al.			
DEV	AP	5,795,215	08-1998	Guthrie et al.			

FOREIGN PATENT DOCUMENTS

		Document	Date	Country	Class	Sub-class	Translation Yes No
DEV	AQ	WO 98/27585	06-1998	PCT	—	—	
DEV	AR	WO 00/26443	05-2000	PCT	—	—	

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

DEV	AS	Joseph M. Steigerwald et al., "Chemical Mechanical Planarization of Microelectronic Materials", A Wiley-Interscience Publication, 1997, by John Wiley & Sons, Inc. pages 212-222. <i>No month</i>
DEV	AT	Robert D. Mikkola et al., "Investigation of the Roles of the Additive Components for Second Generation Copper Electroplating Chemistries Used for Advanced Interconnect Metalization", 2000 IEEE, IEEE Electron Devices Society, Pages 117-119. <i>No date</i>
DEV	AU	James J. Kelly et al., "Leveling and Microstructural Effects of Additives for Copper Electrodeposition", Journal of the Electrochemical Society, 1999, pages 2540-2545. <i>No month</i>

EXAMINER *Donald R. Valentine*DATE CONSIDERED *5-1-03*

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication.

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TO-1449 U.S. Department of Commerce Patent & Trademark Office	Atty. Docket No. 2022/49308	Serial No. Not Yet Assigned
	Applicant Cyprian E. Uzoh et al.	
	Filing Date May 1, 2001	Group Not Yet Assigned

INFORMATION DISCLOSURE STATEMENT
 Use several sheets if necessary

U.S. PATENT DOCUMENTS							
Number	Document Number	Date	Name	Class	Sub-Class	Filing Date (if appropriate)	
✓	BA 5,807,165	09-1998	Uzoh et al.				
	BB 5,840,629	11-1998	Carpio				
✓	BC 5,858,813	01-1999	Scherber et al.				
	BD 5,884,990	03-1999	Burghartz et al.				
	BE 5,897,375	04-1999	Watts et al.				
	BF 5,911,619	06-1999	Uzoh et al.				
✓	BG 5,922,091	07-1999	Tsai et al.				
	BH 5,930,669	07-1999	Uzoh				
	BI 5,933,753	08-1999	Simon et al.				
	BJ 5,954,997	09-1999	Kaufman et al.				
✓	BK 5,985,123	11-1999	Koon				
	BL 6,004,880	12-1999	Liu et al.				
	BM 6,027,631	02-2000	Broadbent				
	BN 6,063,506	05-2000	Andricacos et al.				
✓	BO 6,066,030	05-2000	Uzoh				
	BP 6,071,388	06-2000	Uzoh				
	BQ 6,074,544	06-2000	Reid et al.				
✓	BR 6,103,085	08-2000	Woo et al.				
✓	BS 6,136,163	10-2000	Cheung et al.				
✓	BT 6,176,992 B1	01-2001	Talieh				

FOREIGN PATENT DOCUMENTS							
	Document	Date	Country	Class	Sub-class	Translation Yes No	
	BU						
	BV						

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)							
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	BY						

NER <i>Donald R. Ventme</i>	DATE CONSIDERED <i>3/10/03</i>
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Form PTO-1449 U.S. Department of Commerce
Patent & Trademark Office

Atty. Docket No.
2022/49308

Serial No.
09/845,262

Applicants
Cyprian E. Uzoh et al.

Filing Date
May 1, 2001

Group
3723

INFORMATION DISCLOSURE STATEMENT
(Use several sheets if necessary)

U.S. PATENT DOCUMENTS

Examiner Initial		Document Number	Date	Name	Class	Sub-Class	Filing Date (appropriate)
AA		US 6,299,741 B1	10-2001	Sun et al.			
AB		6,113,759	09-2000	Uzoh			
AC		2001/0017258 A1	08-2001	Ishida et al.			
AD		US 6,193,859 B1	02-2001	Contolini et al.			
AE		US 6,244,942 B1	06-2001	Zuniga			
AF		2001/0041526 A1	11-2001	Perlov et al.			
AG		6,106,378	08-2000	Perlov et al.			
AG		US 6,297,155 B1	10-2001	Simpson et al.			
AI							

FOREIGN PATENT DOCUMENTS

		Document	Date	Country	Class	Sub-Class	Translation Yes No
	AJ						
	AK						

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)

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		Applicant Cyprian E. Uzoh et al.			
		Filing Date May 1, 2001		Group Not Yet Assigned	

U.S. PATENT DOCUMENTS							
Examiner Initial	Document Number	Date	Name	Class	Sub-Class	Filing Date (if appropriate)	
<i>DM</i>	AA	6,132,587	10-2000	Jorne et al.			
	AB						
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Notice of References Cited

Application No.

09/845,262

Applicant(s)

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Donald Vabutine

Group Art Unit

1742

Page 1 of 1

U.S. PATENT DOCUMENTS

*		DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS
A		4,258,316	3/1981	LEIF	324	71CP
B						
C						
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FOREIGN PATENT DOCUMENTS

*		DOCUMENT NO.	DATE	COUNTRY	NAME	CLASS	SUBCLASS
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Notice of References Cited

Application No.
09/845,262

Applicant(s)
UZOH et al.

Examiner
Donald Valentine

Group Art Unit
1741

Page 1 of 1

U.S. PATENT DOCUMENTS

*	DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS
A	6,261,433	7/2001	LANDAU	205	96
B	5,683,564	11/1997	REYNOLDS	204	212x
C	6,365,017	4/2002	HONGO et al	204	212
D					
E					
F					
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FOREIGN PATENT DOCUMENTS

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X		

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